NDS™
WE PUT WATER IN ITS PLACE

DRAINAGE SOLUTIONS, INC

(317) 346-4110
www.drainagesolutionsinc.com

EZflow®

French Drain Technology

The Engineered French Drain Solution

30% more flow than gravel

100+ year material lifespan

Advanced Lightweight Installation - Up to **50% labor savings**

Foundation Drainage

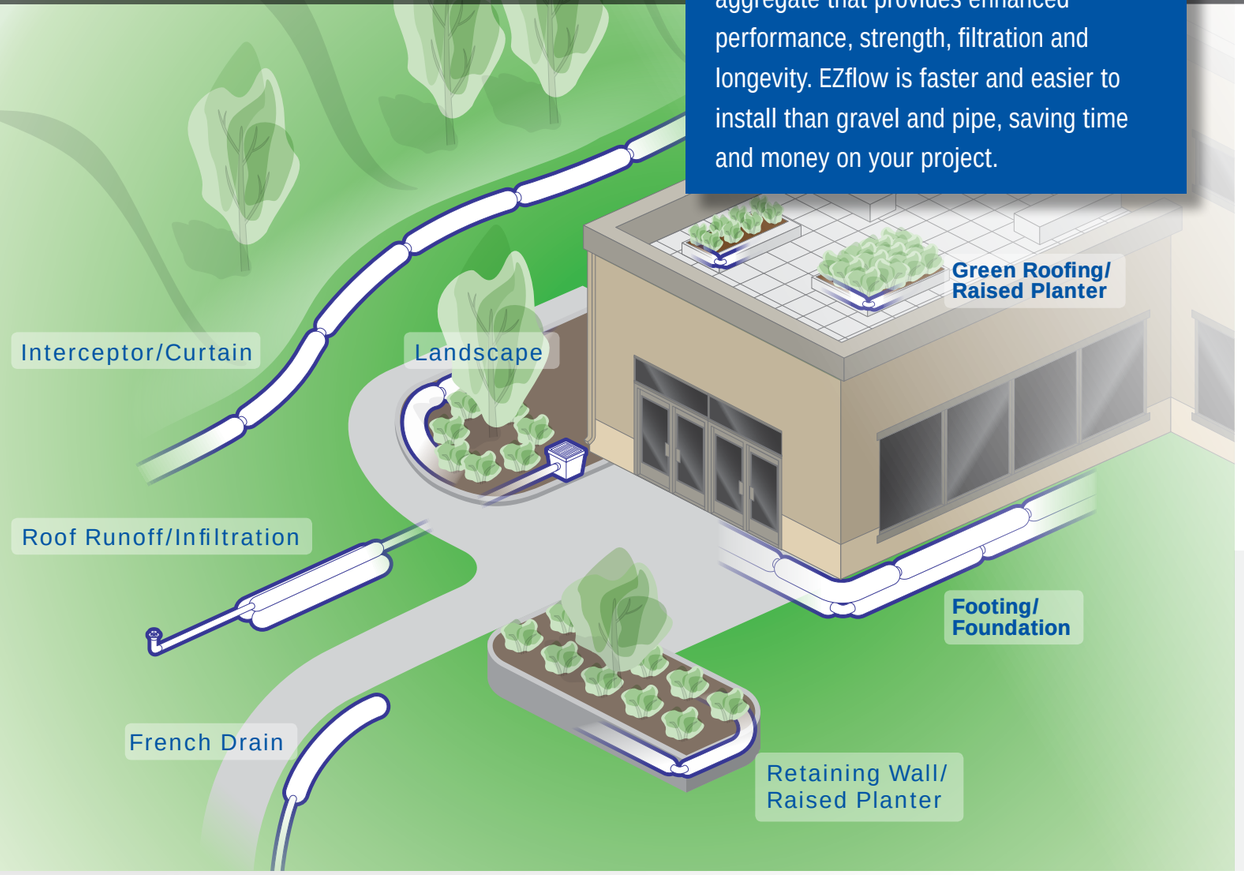

Landscape


Retaining Walls


Athletic Fields

EZflow Applications

EZflow is an engineered French drain system incorporating a polystyrene aggregate that provides enhanced performance, strength, filtration and longevity. EZflow is faster and easier to install than gravel and pipe, saving time and money on your project.

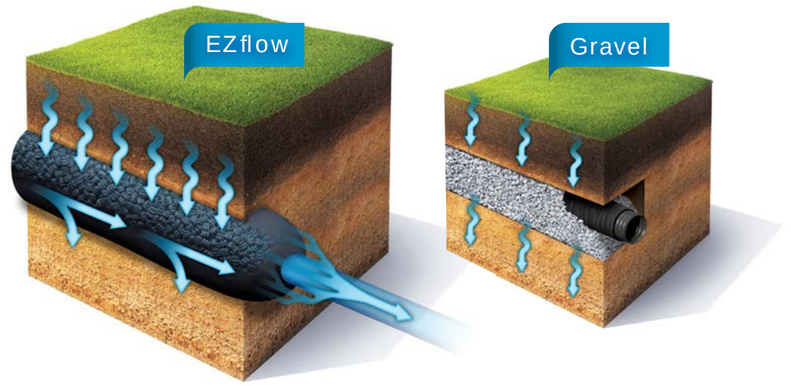


Over 100 million feet of EZflow is in the ground

Superior performance and key advantages over traditional gravel and pipe

Increased flow rate

Poly-Rock™ aggregate features engineered flow channels that increase capacity. The result is a superior flow rate – **30% better than gravel and pipe.**



Install in half the time

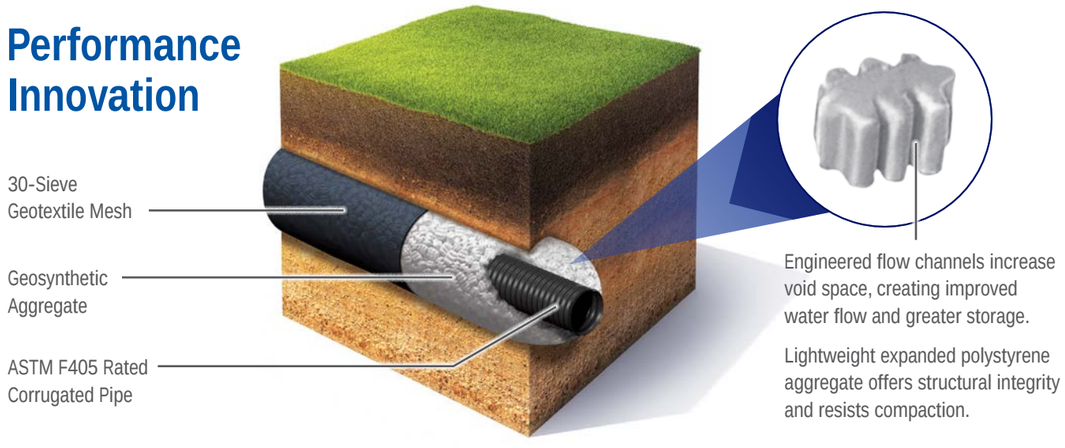
Up to a 50% labor savings.

Watch detailed installation videos at **ndspro.com/videos**

Built for life – Install it once!

100+ year material lifespan.

Performance Innovation



Engineered flow channels increase void space, creating improved water flow and greater storage.

Lightweight expanded polystyrene aggregate offers structural integrity and resists compaction.

The Green Choice

100% recycled aggregate material

Projects qualify for LEED® credits

EZflow Applications

EZflow provides exceptional performance for a variety of applications

It is a convenient subsurface drainage alternative to traditional stone-and-pipe drainage, storage and infiltration systems. With a full line of options, EZflow is ideal for multiple applications.

Retaining Walls

Retaining walls work to hold back earth in the landscape. Hydrostatic pressure from groundwater can cause even low retaining walls to fail, so drainage is critical to wall longevity. Also groundwater weeping through dry-stacked masonry or timber pile retaining walls can cause unsightly staining and streaking. Similar to their function in foundation and footing drains, EZflow drainage systems intercept and convey groundwater from behind a retaining wall, relieving hydrostatic pressure and preventing weeps.*

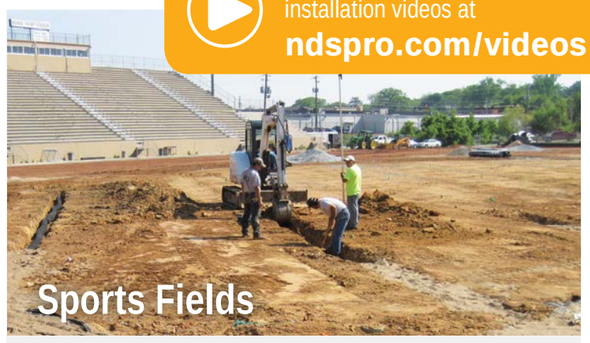
Foundation and Footing Perimeter Drains

Foundation and footing perimeter drainage systems prevent moisture from entering a building basement or crawlspace through interception and removal. Aggregate-only EZflow drainage bundles stacked along the foundation wall face within 18 inches of exterior finished grade will intercept groundwater effectively and drain to a bundle with pipe below.

Landscape Drains

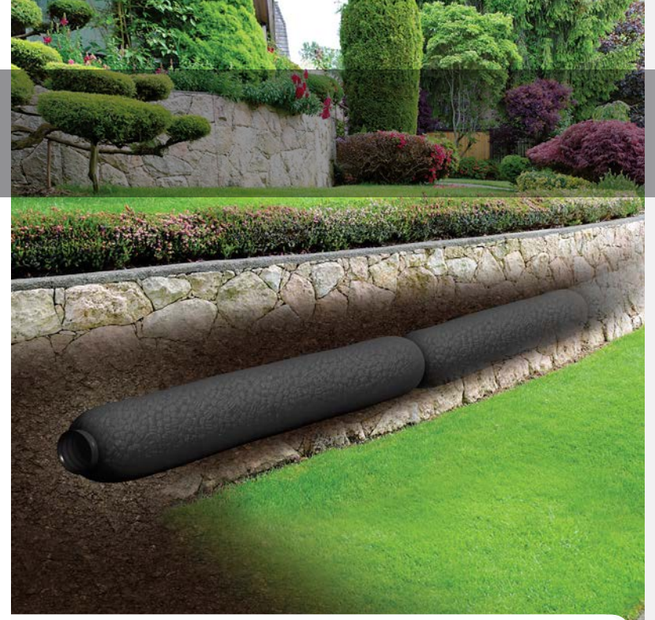
Landscape drains are used to prevent excess soil saturation in planting beds and structural planters that would otherwise compromise the health of landscape and ornamental plantings.

Watch detailed installation videos at **ndspro.com/videos**

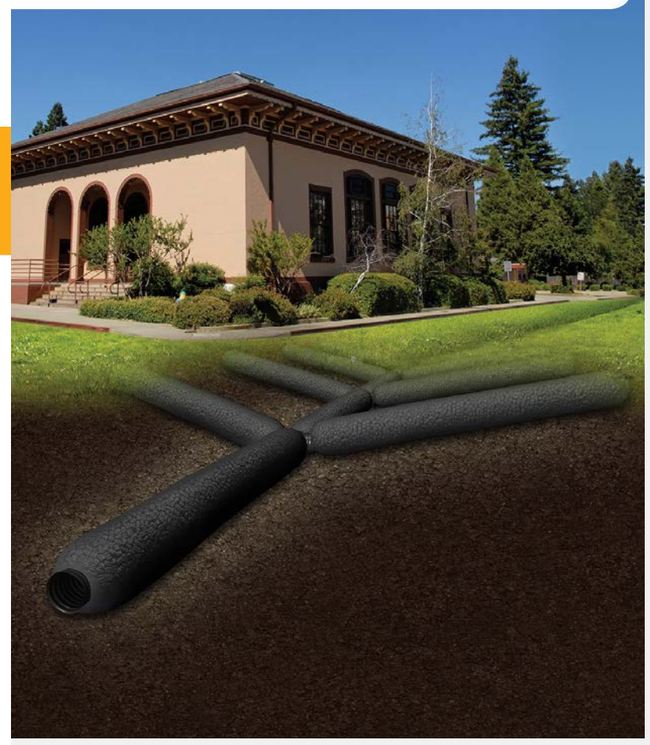


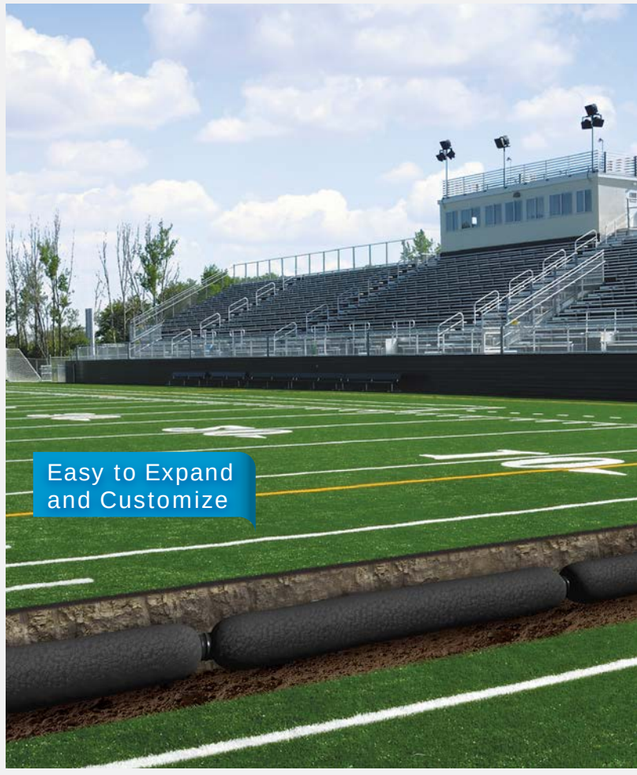
Sports Fields

Sports field drainage quickly returns turf to a playable condition after rain events. It also removes excess water from the root zone to maintain a healthy turf if overwatering occurs. The superior flow performance of EZflow provides improved water flow when compared to traditional drainage systems, preventing oversaturation and preserving playability.



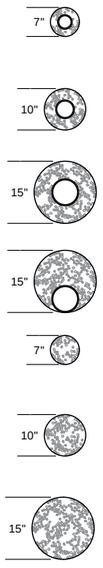
> **Now that I have used EZflow, I am never going back to heavy gravel.**
>
> Marian Marum
>
> *Marum Partnership Landscape Architecture, San Diego, California*





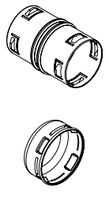
Product Offering

EZflow® Gravel-Free French Drain



Part No.	Description	Color	Bundle Size/ Linear Feet	Wt. per Bundle (lbs.)	Product Class	Specifications
EZ-0701F	7" mesh with 3" slotted pipe (center)	Black	90	32.4	11RP	10 ft. polyethylene slotted drain pipe surrounded by 100% recycled polystyrene aggregate and enclosed in 30-sieve polyethylene geotextile mesh.
EZ-1001F	10" mesh with 4" slotted pipe (center)	Black	50	29.5	11RP	
EZ-1501F	15" mesh with 6" slotted pipe (center)	Black	20	26.0	11RP	
EZ-1501FB	15" mesh with 6" slotted pipe (bottom)	Black	20	26.0	11RP	
EZ-0701A	7" mesh without pipe – aggregate only	Black	90	18.0	11RP	10 ft. segment of 100% recycled polystyrene aggregate only, enclosed in 30-sieve polyethylene geotextile mesh.
EZ-1001A	10" mesh without pipe – aggregate only	Black	50	13.5	11RP	
EZ-1501A	15" mesh without pipe – aggregate only	Black	20	12.4	11RP	

EZflow® Internal Couplings and End Caps



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
3C05	3" Corrugated Internal Coupling	Black	60/box	0.30	11RP
4C07	4" Corrugated Internal Coupling	Black	36/box	0.30	11RP
6C07	6" Corrugated Internal Coupling	Black	12/box	0.80	11RP
3C06	3" Corrugated End Cap	Black	33/box	0.30	11RP
4C06	4" Corrugated End Cap	Black	21/box	0.50	11RP
6C06	6" Corrugated End Cap	Black	15/box	0.50	11RP

Storage & Flow for EZflow® Drainage Bundles *(45% void space among consolidated EPS aggregate)*

Pipe Bundles		
Product	Storage Volume *(gallons/10 ft. bundle)*	Flow Capacity *(gpm @ 1% slope)*
EZ-0701F	11.4	80.8
EZ-101F	21.5	130.9
EZ-1501F/EZ-1501FB	45.8	345.0

Aggregate-Only Bundles		
Product	Storage Volume *(gallons/10 ft. bundle)*	Flow Capacity *(gpm @ 1% slope)*
EZ-0701A	8.8	37.1
EZ-1001A	17.2	75.7
EZ-1501A	36.5	170.3

Usage Guidelines

Individual EZflow drainage bundles are 10 feet in length and range in weight from 2 pounds for the 7-inch aggregate-only bundles to 13 pounds for the 15-inch bundles with pipe. Several bundles are wrapped together in white plastic for shipping. The white plastic wrapping must not be installed along with the bundle and should be removed prior to installation and disposed of properly.

Bends and Corners

EZflow drainage aggregate-only bundles can bend around and into most corners with ease. Bundles with pipe require appropriate pipe.

Pipe Connections

Bundles with pipe require couplers to make connections between bundles and other system piping components. Insert the appropriately sized coupler into the EZflow bundle until the coupler clicks into place; insert the remaining coupler end into the next bundle or system component and click into place to finish this connection. Connections to other pipe materials can be accomplished using NDS corrugated pipe adapters.

Installation in Fine-Grained Soils

If a system needs to be installed in soils that have more than 50% by content silt or clay particles, a secondary fabric with the appropriate apparent opening size to match soil conditions should be wrapped around the circumference of the system. An engineer or landscape architect should be consulted to determine the appropriate fabric for such conditions.

Structural Capability

EZflow drainage systems are designed for use in residential and light commercial non-traffic drainage applications. EZflow drainage systems are designed to withstand single pass construction wheel loading and occasional light vehicular load of up to 16,000 lbs. per axle provided the product is installed in a trench with 12" of compacted fill placed over the bundles. **EZflow drainage systems are not designed to be placed under live-load traffic conditions such as paved or non-paved roadways, driveways or parking areas.**

Reducing Bundle Length

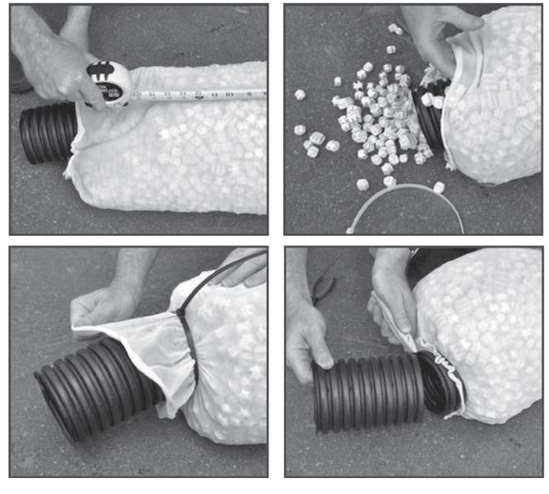
If less than a ten-foot EZflow bundle length is needed, the bundle can be cut and retied to the desired length with a plastic zip-tie, wire or duct tape, and the excess beads can be placed in the excavation. Bundle length can be reduced as follows:

First, measure the desired length plus one-half the product diameter from one end of the bundle.

Second, cut the mesh around the bundle circumference at the measured distance, remove excessive EPS aggregate from mesh and place the excess EPS aggregate in the trench.

Third, twist the mesh until the EPS aggregate is held firmly inside the bundle and secure the mesh. If the bundle has a pipe, gather the mesh against the pipe until the aggregate is held firmly in place, secure mesh into place, apply a zip-tie and tighten.

Lastly, for a bundle with pipe trim any excess pipe down to the desired length.



Product Storage

Products should not be exposed to direct sunlight for periods exceeding 60 days, as the mesh fabric may become compromised, and yellowing of the aggregate has been observed. It is recommended that EZflow drainage products be stored inside and away from direct sunlight. Product should be covered securely with a light-blocking tarp if stored outside for extended periods.

Frequently Asked Questions

Can EZflow Withstand the Weight of a Vehicle?

EZflow drainage systems are designed for use in residential and light commercial non-traffic applications. EZflow drainage systems are designed to withstand single pass construction wheel loading and occasional light vehicular load of up to 16,000 lbs. per axle provided the product is installed in a trench with 12" of compacted fill placed over the bundles. EZflow drainage systems are not designed to be placed under live-load traffic conditions such as paved or non-paved roadways, driveways or parking areas.

Can I Cut EZflow?

Yes, simply maneuver the aggregate to either side of your cut, use two long zip-ties to tourniquet the area to be cut and proceed with the cut.

Does EZflow Poly-Rock Absorb Water?

EZflow's Poly-Rock is an engineered aggregate that consists of hardened expandable polystyrene, an inert compound. Polystyrene does not absorb water, nor break down in water or other aqueous solutions.

Does EZflow Qualify Projects for LEED Credits?

Yes, EZflow can contribute to the accumulation of LEED credits for a project when used as part of the stormwater design, or by contributing to the proportion of recycled materials used on site.

How Deep Should EZflow Be Buried?

EZflow must be covered with a minimum of 6" of soil. The maximum depth to bury EZflow is 10 ft. of soil. Please contact NDS Technical Services for depths exceeding 10 ft.

Can EZflow Withstand the Freeze-Thaw Cycle of Cold Weather Climates?

The polystyrene aggregate will tolerate extreme temperature ranges, and has a continuous use temperature range of -108°F to +175°F. It does not become brittle at subzero temperatures and does not need to be buried any deeper than for an installation in any other temperature range.

How Does Water Get to It in Clay Soil?

Most clay soils are permeable, although at a significantly lower rate than granular soils. The ability of a subsurface drain to drain clay soils is a function of the clay soil's permeability – i.e. the ability of the soil to transmit water to the drainage trench. Groundwater interceptor drains can work in these soils if designed properly. Groundwater interceptor drains in low permeable soil applications require a minimum of 4" of suitable fill material, course sand, placed above the drainage bundle and brought to grade. This can also be achieved with a minimum of 2" of an overlying permeable strata, such as a low-clay topsoil, mulch or decorative landscape stones over a minimum of 2" of course sand (see drawing). The interceptor drain should daylight to prevent saturation of the surrounding clay soils and to prevent the drain system from "bath tubbing."

What Is the Poly-Rock Aggregate Material?

The EZ-Drain™ aggregate bead (Poly-Rock) is manufactured with expanded polystyrene.

Will Rodents Be Attracted to This Product?

Similar to mineral aggregate, expanded polystyrene offers no nutritional value for insects or rodents and is therefore not a suitable environment for them. For this reason EPS has been widely used in building applications, inclusive of subsurface installations.

Will Root Intrusion Be a Significant Factor?

Root intrusion should be no more of a significant factor than in any other type of drainage system. The same "best design practices" should be employed for EZflow that are applied on other types of drainage systems. If roots are a concern then commercially available root inhibitors are available (by others).

***Note:** It is not recommended that an installation contractor substitute EZflow drainage systems for stone where the stone is being utilized for wall support such as in backfill of cantilever, anchor and mechanically stabilized earth retaining wall systems. It is not recommended that EZflow drainage bundles be used in walls having greater than 5 feet of exposed wall face. A qualified design engineer can utilize EZflow drainage bundles in these walls with proper design protocol that considers the lightweight nature of these products.